Notice of Allowability	Application No.	Applicant(s)	
	10/681,305	MAEDA ET AL.	
	Examiner	Art Unit	
	Richard Chan	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *10/09/03*.

2. ☒ The allowed claim(s) is/are *1-16*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☒ Certified copies of the priority documents have been received in Application No. *10/681,305* .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 4/3/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-16 are allowed over cited prior art.

The following is an examiner's statement of reasons for allowance:

With respect to claim 1, the prior art Huntley (US 4,142,162) discloses a modulation circuit Fig.1 having a first transistor 26 for amplitude modulating a carrier wave from nodes 36 and 38 applied to the base of said first transistor, however the signal that is applied the emitter portion of said first transistor of said amplifier circuit is an analog signal. The prior art fails to teach wherein a signal-wave generation circuit for inputting a first rectangular waveform corresponding to said digital signal for generating said signal as to correspond to a second pulse signal whose waveform is shaped so that the level at each rise time of each pulse of said first input pulse signal becomes higher than the high level in a steady state of said first signal at the level at each fall time of each pulse of said first input pulse signal becomes lower than the low level in the steady state of said first signal.

With respect to claims 2-9, all claims depend on claim 1.

With respect to claim 10, the prior art Huntley (US 4,142,162) discloses a modulation method for use with a modulation circuit Fig.1, having a transistor 26, which

amplitude-modulates data transmitted for amplitude-modulating a carrier wave from nodes 36 and 38 applied to the base of said transistor into an amplitude-modulated wave in accordance with a signal wave applied to the emitter of said transistor. However, the prior art does not disclose wherein inputting a first pulse signal in a rectangular waveform corresponding to said digital data; generating said signal wave in such a manner as to correspond to a second pulse signal whose waveform is shaped so that the level at each rise time of each pulse of said first input pulse signal becomes higher than the high level in a steady state of said first signal and the level at each fall time of each pulse of said first input pulse signal becomes lower than the low level in the steady state of said first signal; and applying said generated signal wave to the emitter of said transistor.

With respect to claim 11, the prior art Huntley (US 4,142,162) discloses an electronic circuit Fig.1 for amplitude-modulating data transmitted via an antenna including a resonance circuit, said electronic circuit comprising: a modulation circuit, having a field-effect transistor 26, for amplitude-modulating a carrier wave from nodes 36 and 38 applied to the gate of said field-effect transistor into an amplitude-modulated wave in accordance with a signal wave applied to the source of said field-effect transistor and for supplying said amplitude-modulated wave, however the prior art does not disclose wherein a signal-wave generation circuit for inputting a first pulse signal in a rectangular waveform corresponding to said digital data, for generating said signal wave in such a manner as to correspond to a second pulse signal whose waveform is

shaped so that the level at each rise time of each pulse of said first input pulse signal becomes higher than the high level in a steady state of said first pulse signal and the level at each fall time of each pulse of said first input pulse signal becomes lower than the low level in the steady state of said first pulse signal, and for applying said generated signal wave to the source of said field-effect transistor.

With respect to claim 12, the prior art Huntley (US 4,142,162) discloses a modulation method for use with a modulation circuit, having a field-effect transistor 26, which amplitude-modulates data transmitted via an antenna including a resonance circuit, for amplitude-modulating a carrier wave applied to the source of said field-effect transistor into an amplitude-modulated wave in accordance with a signal wave applied to the source of said field-effect transistor and for supplying said amplitude-modulated wave, however the prior does not disclose wherein a first pulse signal in a rectangular waveform corresponding to said digital data; generating said signal wave in such a manner as to correspond to a second pulse signal whose waveform is shaped so that the level at each rise time of each pulse of said first input pulse signal becomes higher than the high level in a steady state of said first pulse signal and the level at each fall time of each pulse of said first input pulse signal becomes lower than the low level in the steady state of said first pulse signal; and applying said generated signal wave to the source of said field-effect transistor.

With respect to claim 13, the prior art Huntley (US 4,142,162) discloses wherein an information processing device Fig.1 for amplitude-modulating first digital information

and transmitting the information, said information processing device comprising: modulation means, having a transistor 26, for amplitude-modulating a carrier from nodes 36 and 38 applied to the base of said transistor into an amplitude-modulated wave in accordance with a signal wave which corresponds to said first information, the signal wave being applied to the emitter of said transistor, and for outputting said amplitude-modulated wave via the collector of said transistor; first output means for outputting said carrier wave applied to the base of said transistor, however the prior art does not disclose wherein second output means for outputting a first pulse signal in a rectangular waveform corresponding to said first information; signal-wave generation means for generating said signal wave in such a manner as to correspond to a second pulse signal whose waveform is shaped so that the level at each rise time of each pulse of said first pulse signal output from said second output means becomes higher than the high level in a steady state of said first signal and the level at each fall time of each pulse of said first pulse signal becomes lower than the low level in the steady state of said first signal, and for applying said generated signal wave to the emitter of said first transistor; and antenna means, having a resonance circuit, for transmitting an electromagnetic wave based on said amplitude-modulated wave output from said modulation means to another information processing device.

Claim 14 and 15 are allowed as being dependent on allowable claim 13.

With respect to claim 16, the prior art discloses wherein an information processing method for use with an information processing device comprising a modulation circuit, having a transistor 26, for amplitude-modulating a carrier wave from

nodes 36 and 38 applied to the base of said transistor into an amplitude-modulated wave in accordance with a signal wave which corresponds to digital information to be transmitted, the signal wave being applied to the emitter of said transistor, and for outputting said amplitude-modulated wave via the collector of said transistor; and having a resonance circuit, for transmitting an electromagnetic wave based on said amplitude-modulated wave output from said modulation circuit to another information processing device, however the prior art does not disclose wherein outputting a first pulse signal in a rectangular waveform corresponding to said digital information; generating said signal wave in such a manner as to correspond to a second pulse signal whose waveform is shaped so that the level at each rise time of each pulse of said first pulse signal becomes higher than the high level in a steady state of said first pulse signal and the level at each fall time of each pulse of said first pulse signal becomes lower than the low level in the steady state of said first pulse signal; and applying said generated signal wave to the emitter of said first transistor.

The prior art discloses an amplitude modulation circuitry which inputs a carrier frequency into the base of a transistor and inputs an analog signal to the emitter portion of the transistor, and not a rectangular signal as disclosed.

The prior art also discloses wherein digital signals are inputted into an amplitude modulation signal module with a carrier wave also being inputted, however the prior art does not disclose wherein the carrier frequency is being inputted in the base of the transistor as disclosed by applicant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Huntley reference (US 4,142,162) discloses a low distortion double sideband suppressed carrier monolithic modulator.

The Leitch reference (US 5,239,275) discloses an amplitude modulator circuit having multiple power supplies.

The Ishikawa reference (US 5,079,525) discloses an audio-video modulator system on an IC chip.

The Shigenari reference (US 5,172,079) discloses a balanced modulator designed for low supply voltage.

The Sander reference (US 6,816,016) discloses a high efficency modulating RF amplifier.

The Sinusas reference (US 3,550,040) discloses a double balanced modulator circuit readily adaptable to integrated circuit fabrication.

The Ogita reference (US 4,293,736) discloses a noise eliminator for radio receiver.

The Yasumura reference (US 4,292,598) reference discloses an automatic gain control circuit.

The Davidson reference (US 5,014,116) discloses a feed forward automatic level control circuit for a high.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chan whose telephone number is (571) 272-0570. The examiner can normally be reached on Mon - Fri (9AM - 5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571)272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard Chan
Examiner
Art Division 2618
4/10/06

NAY MAUNG
SUPERVISORY PATENT EXAMINER